

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-006467**Date Inspected:** 23-Apr-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1845**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 645**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower Fabrication**Summary of Items Observed:**

CWI Inspector: Mr. Sun Bo

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Prior to Caltrans QA Inspectors' concurring with issuance of OBG deck plate closed rib green tag releases a review of the ultrasonic inspection database is performed to verify all closed rib tack weld repair locations have been ultrasonically accepted. Today this QA Inspector, Mr. Paul Dawson, performed data entry of ultrasonic inspection information from the field generated Ultrasonic inspection data sheets onto the common drive computer database for the following OBG deck panel: DP447-001.

Tower Bay 10

ZPMC presented Caltrans QA with "Inspection Notification Document" #02761 which states Lift 1 South corner seam D/E fit lug from 18 meters to 47.6 meters diaphragm, welds SSD1-a111g/h-240, 241, 104, 17;

SSD1-A164c/j-251, 253, 98, 99; SSD1-A164d/j-224, 225, 101, 102, SSD1-A164e/j-94, 95, 216, 217;

SSD1-a164f/j-89, 93, 209, 210; SSD1-A164g/j-96, 97, 212, 214; SSD1-A164h/j-91, 92, 203 and 204.

Lift 1 South corner seam D/E triangle diaphragm to skin plate from 18 meters to 47.6 meters welds SSD1-A, SSD1-A111g/h-110, 239, SSD1-A164c/j-97, 160; SSD1-A164d/j; SSD1-A164e/j-92, 208, SSD1-A164f/j-92, 204,

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

SSD1-A164g/j-91, 215, SSD1-A164h/j-101, 194.

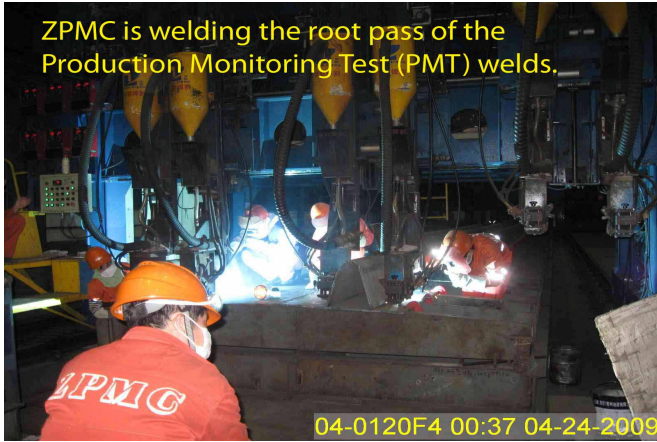
Lift 1 South corner seam D/E fit lug from 18 meters to 47.6 meters diaphragm welds SSD1-A111g/h-102, 104, 106, 108, 237, 238, 214, 213; SSD1-A164c/j-95, 96, 100, 101, 249, 250, 159, 252, SSD1-A164d/j-96, 97, 103, 104, 222, 223, 226, 227; SSD1-A164e/j-88, 93, 96, 97, 214, 215, 218, 219; SSD1-A164f/j-87, 88, 94, 95, 207, 208, 211, 21.; SSD1-A164g/j-94, 95, 98, 99, 210, 211, 212, 213; SSD1-A164h/j-89, 90, 93, 94, 201, 202, 205, and 206. This QA Inspector, Paul Dawson and Caltrans QA Inspector Mr. Utekar performed final random visual inspection of the welds listed above and after minor grinding of isolated areas the QA Inspectors' determined the items observed appear to comply with project specifications.

OBG Bay 9

The QA Inspector monitored welding of closed rib Production Monitoring Test representing deck plates DP107-001 and DP105-001 which were welded using one single base plate at approximately 00:35 hours using gantry #2. The QA Inspector observed four ZPMC welders using welding procedure specification WPS-B-T-2342-U1(Urib)-4 using the gas metal arc welding process for the root pass and submerged arc welding process for the cover pass of partial penetration groove welds on two PMT closed rib welds at the same time. ZPMC has multiple welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. The QA Inspector observed a welding travel speed of approximately 532 mm per minute for the root passes and 520 mm per minute for the cover passes. As the welding commences, each of the welders is responsible for one of the welding heads. Welder Ms. Wang Xiaorong, stencil 059445 completed the root pass of weld #1 with a welding current of approximately 365 amps and 31.2 volts and the cover pass welding current of approximately 685 amps and 25.9 volts. Welder Mr. Chen Jie, stencil 059468, completed the root pass of weld #2 with a welding current of approximately 360 amps and 30.4 volts and the cover pass welding current of approximately 690 amps and 25.2 volts. Welder Mr. Zhang Liping, stencil 201840 completed the root pass of weld #3 with a welding current of approximately 365 amps and 31.1 volts and the cover pass welding current of approximately 690 amps and 24.9 volts. Welder Ms. Jiang Shuangchen, stencil 201788 completed the root pass of weld #4 with a welding current of approximately 360 amps and 31.3 volts and the cover pass welding current of approximately 685 amps and 24.8 volts. The QA Inspector performed random visual inspection of the root pass and cover passes and items observed appear to comply with project specifications. Following completion of the welding ZPMC QC CWI Inspector Mr. Sun Bo marked a 500 mm length of the welds as being the areas that are to be representative of this PMT test. The QA Inspector observed ZPMC NDE inspector Mr. Tang Xingshan performing ultrasonic of each of the welds in the areas where Mr. Bo had marked for PMT testing. Following ZPMC's UT acceptance the QA Inspector marked a total of 10 locations where macroetch samples are to be obtained. ZPMC then cut and prepared macroetch samples. ZPMC QC CWI Inspector Mr. Sun Bo and ABF representative Ms. Lu Yun visually inspected these macroetch samples and documented their acceptance on the ZPMC Production Monitoring Test Plate Inspection Report sheet dated 04-24-2009. The QA Inspector visually inspected each of these macroetch samples and items observed by the QA Inspector appear to comply with project specifications. See the photograph below for additional information.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)



Summary of Conversations:

See above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Clifford,William	QA Reviewer
